

Friday, August 25, 2000  
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## Perchlorate study shows no ill effects on thyroid

Chilean children research contradicts Arizona report

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Review-Journal

Studies of infants and schoolchildren in a Chilean city where drinking water contains high levels of naturally occurring perchlorate show the compound had no adverse effects on thyroid functions.

The studies, presented Wednesday at the Air Force Pollution Prevention Conference in San Antonio, contradict the findings of an Arizona study earlier this year that concluded perchlorate -- a rocket-fuel ingredient discovered in Lake Mead in 1997 -- may affect hormone production in infants.

The latest studies, by Dr. Casey Crump, an epidemiologist at the University of Washington, compared thyroid hormone production in infants and children from Taltal, Chile, to those in two other northern Chile cities -- Antofagasta and Chañaral.

The thyroid gland regulates metabolism and affects growth and mental development.

Crump was commissioned to conduct the studies by Kerr-McGee's corporate medical director, Dr. John Gibbs.

Gibbs, in a telephone interview Thursday from Perth, Australia, said the Chilean studies were more encompassing than the Tucson, Ariz., study by Dr. Ross Brechner, chief of the Arizona Department of Health Services.

While Brechner found perchlorate may affect hormone production in infants, he could not confirm that perchlorate was the cause of any hormone production problems.

Gibbs said the Arizona study focused on a skewed population, one that consisted of the 10 percent of the infants with lower levels of a certain hormone.

Perchlorate in groundwater in northern Chile stems from extensive

nitrate deposits in the Atacama Desert. Perchlorate levels in wells that supply Taltal are 120 parts per billion, about 10 times higher than perchlorate levels detected in Lake Mead and some treated drinking water supplies from the lake.

Perchlorate levels in Chañaral's water supply are 7 parts per billion, similar to those in Lake Mead.

Antofagasta was used as a control city because its drinking water comes from springs on the fringe of the Andes and contains no detectable levels of perchlorate.

"Results of the recently completed studies indicate no effects on thyroid health among infants and young children from perchlorate in drinking water at concentrations roughly 10 times those found in Lake Mead," according to a summary of the studies by Crump, who was a fellow last year at the Fred Hutchinson Cancer Research Center in Seattle.

The studies underwent peer review and were published in the June issue of the Journal of Occupational and Environmental Medicine.

Another study, published by the journal in February, compared infants in Las Vegas with infants in Reno, where perchlorate hasn't been detected in the drinking water supply. It found no difference in infants who were exposed to perchlorate and those who were not. That study differed from the Arizona study because it measured thyroid hormone levels instead of levels of a different hormone that stimulates thyroid hormone production.

Gibbs said the Chilean studies examined levels of both the thyroid hormone, T-4, and the thyroid stimulating hormone in 50 children from each of the three cities.

"We tested blood for functions. In everything we could measure on the children, there was absolutely no differences," he said.

Government scientists have been trying to determine the health effects of perchlorate and set a safe drinking water standard for it because of widespread contamination from where it was produced in Southern Nevada and where it was used in rocket and missile systems and fireworks across the United States.

This story is located at:

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